

IN THE CLAIMS:

Please amend claims 27, add new claim 29, and cancel claim 4, without prejudice or disclaimer, as follows.

1. (Previously Presented) A mixer arrangement comprising:

a first mixer having at least one signal input configured to receive a first signal including a frequency of which is to be changed, at least one frequency input for receiving an input frequency and at least one output, said first mixer being configured to mix the first signal with the input frequency to provide an output which is output by said at least one output; and

a second mixer having at least one frequency input configured to receive the input frequency and having at least one output,

wherein at least one output of the first mixer and at least one output of said second mixer being combined to cancel unwanted components in the outputs of said mixers, and

wherein said unwanted components comprise said input frequency.

2. (Original) A mixer arrangement as claimed in claim 1, wherein said first mixer comprises a single signal input, a single frequency input and a single output and wherein said second mixer comprises a single frequency input and a single output.

3. (Previously Presented) A mixer arrangement as claimed in claim 2, further comprising a combiner configured to combine the single output of said first mixer and the single output of the second mixer.

4. (Cancelled).

5. (Original) A mixer arrangement as claimed in claim 1, wherein said first mixer is configured to provide a first output and a second output and said second mixer is configured to provide a third output and a fourth output.

6. (Original) A mixer arrangement as claimed in claim 5, wherein the mixer arrangement is such that the first output of the first mixer is an inverse of the second output of the first mixer and the third output of the second mixer is an inverse of the fourth output of said second mixer.

7. (Original) A mixer arrangement as claimed in claim 1, wherein said first mixer includes a first signal input and a second signal input, said arrangement being such that the first signal input is an inverse of the second signal input.

8. (Original) A mixer arrangement as claimed in claim 1, wherein said second mixer has two inputs, said two inputs being connected.

9. (Original) A mixer arrangement as claimed in claim 8, wherein a resistive element is provided between said two inputs of said second mixer.

10. (Original) A mixer arrangement as claimed in claim 9, wherein the resistive element of the second mixer has a resistance substantially equal to a resistance on at least one signal input of said first mixer.

11. (Original) A mixer arrangement as claimed in claim 1, wherein said second mixer has two inputs, at least one input of said two inputs is connected to ground.

12. (Original) A mixer arrangement as claimed in claim 1, wherein said first mixer having two frequency signal inputs and said second mixer having two frequency signal inputs.

13. (Original) A mixer arrangement as claimed in claim 12,
wherein one frequency input to each of said first and second mixers is configured to receive an inverse frequency signal which is an inverse of a frequency signal which another frequency signal input of each of the first and second mixers is arranged to receive.

14. (Original) A mixer arrangement as claimed in claim 5, wherein the first output of the first mixer is connected to the first output of the second mixer and one other output of the first mixer is connected to the second output of the second mixer.

15. (Original) A mixer arrangement as claimed in claim 1, wherein said at least one output of the first mixer comprises a first signal component resulting from mixing an input signal with a frequency and a second signal component resulting from a frequency signal, said second signal component being an unwanted component.

16. (Original) A mixer arrangement as claimed in claim 15, wherein said at least one output of the second mixer comprises a signal component resulting from the frequency signal, said signal component being an unwanted component.

17. (Original) A mixer arrangement as claimed in claim 15, wherein the at least one output of the first mixer is combined with the at least one output of the second mixer so that the signal component of the output of the second mixer cancels the second signal component of the output of the first mixer.

18. (Original) A mixer arrangement as claimed in claim 1, wherein said first mixer is configured to upconvert the frequency of the at least signal received at the at least one signal input.

19. (Original) A mixer arrangement as claimed in claim 1, wherein said first and second mixers having similar configurations.

20. (Original) A mixer arrangement as claimed in claim 1, wherein said at least one frequency input of said first and second mixers are arranged to receive a frequency from a common frequency source.

21. (Original) A mixer as claimed in claim 20, wherein said common frequency source includes a local oscillator.

22. (Original) A mixer as claimed in claim 18, wherein said at least one signal is upconverted to a radio frequency.

23. (Original) A mixer arrangement as claimed in claim 1, wherein the mixer arrangement is incorporated in an integrated circuit.

24. (Original) A mixer arrangement as claimed in claim 1, wherein the mixer arrangement is incorporated in a wireless telecommunications entity.

25. (Original) A mixer arrangement as claimed in claim 24, wherein said wireless telecommunications entity is one of a base station and a mobile station.

26. (Original) A mixer arrangement as claimed in claim 1, wherein the mixer arrangement is incorporated in an image rejection mixer.

27. (Currently Amended) ~~A method for mixing signals in a mixer arrangement,~~
the method comprising:

receiving a first signal at a first mixer, wherein the first signal includes a frequency to be changed;

receiving an input frequency input at said first mixer;

mixing the first signal with the frequency input to provide a first output from said first mixer;

receiving the input frequency at a second mixer;

outputting a second output from said second mixer;

combining the first output of the first mixer and the second output of said second mixer to cancel unwanted components in the outputs of said mixers,

wherein said unwanted components comprise said input frequency.

28. (Previously Presented) A mixer arrangement, comprising:

first receiving means for receiving a first signal at a first mixer, wherein the first signal includes a frequency to be changed;

second receiving means for receiving an input frequency input at said first mixer;

mixing means for mixing the first signal with the frequency input to provide a first output from said first mixer;

third receiving means for receiving the input frequency at a second mixer;

outputting means for outputting a second output from said second mixer; and

combining means for combining the first output of the first mixer and the second output of said second mixer to cancel unwanted components in the outputs of said mixers,

wherein said unwanted components comprise said input frequency.

29. (New) A mixer arrangement comprising:

a first mixer having a single signal input configured to receive a first signal including a frequency of which is to be changed, a single frequency input for receiving an input frequency and a single output, said first mixer being configured to mix the first signal with the input frequency to provide an output which is output by said single output;

a second mixer having a single frequency input configured to receive the input frequency and having a single output; and

a combiner configured to select an output from one of the first and second mixers, to invert the selected output, and to add the inverted selected output to the non-selected output of the first and second mixers in order to cancel unwanted components in the outputs of said mixers, wherein said unwanted components comprise said input frequency.